



2023-2024 Efficient and Healthy Schools Program

Recognition Launch

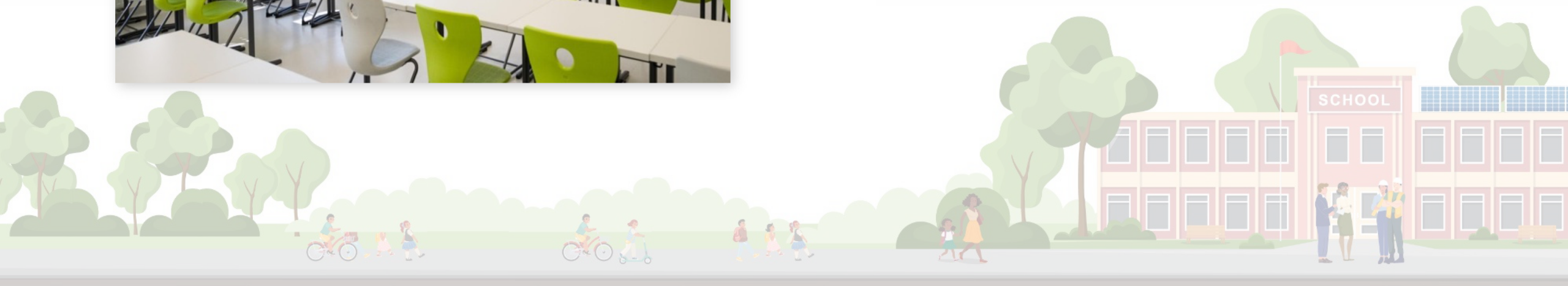


**EFFICIENT AND
HEALTHY SCHOOLS**

Efficient and Healthy Schools Recognition Launch



- Webinar is being recorded
- All attendees are muted during this webinar
- Please enter questions into the Q&A
- Slides and recording will be sent out shortly after



Agenda

- 1 2023-2024 Efficient and Healthy Schools Program
- 2 Support through Technical Assistance
- 3 Apply for Recognition Opportunities
- 4 Lincoln Public Schools – Program Experience
- 5 Question and Answer Session

Today's Presenters



Sydney Applegate
US Department of Energy



David Landman
Berkeley Lab (Affiliate)



Shannon Oliver
New Buildings Institute



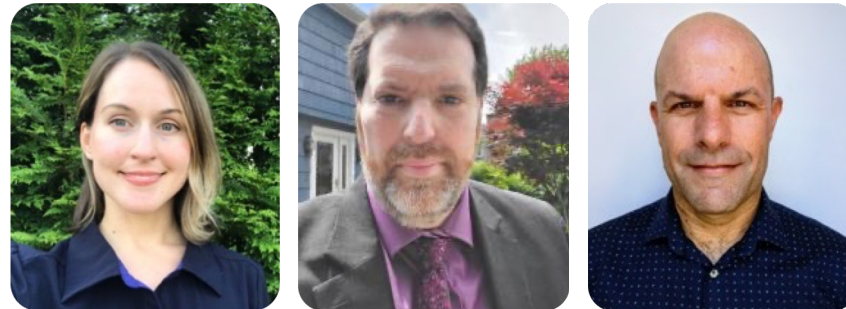
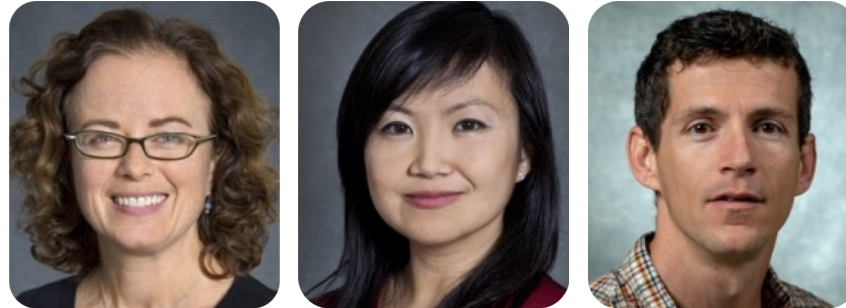
Brittney Albin
Lincoln Public Schools

The Efficient and Healthy Schools Program Team

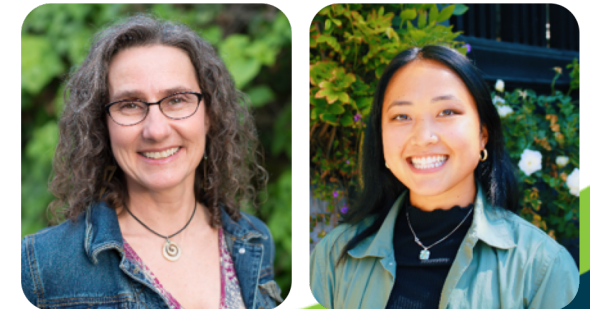
U.S. Department of Energy



Berkeley Lab



New Buildings Institute





2023-2024 Efficient and Healthy Schools Program

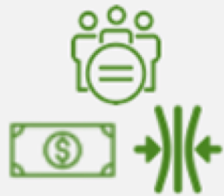
Sydney Applegate

ORISE Science Technology and Policy Fellow
US Department of Energy

Alignment with DOE Priorities



Reduce U.S. building emissions 60% by 2035 and 90% by 2050 vs. 2005 while enabling net-zero emissions economy-wide and centering equity and benefits to communities



Prioritize equity, affordability, and resilience

Ensure that the low-carbon buildings transition benefits disadvantaged communities, reduces energy-related costs, and increases the ability of communities to withstand stresses on building infrastructure



Increase building energy efficiency

Reduce onsite energy use intensity in buildings 30% by 2035 and 45% by 2050 vs. 2005



Accelerate onsite emissions reductions

Reduce onsite GHG emissions in buildings 25% by 2035 and 75% by 2050 vs. 2005



Transform the grid edge at buildings

Increase demand flexibility potential 3X by 2050 vs. 2020 to enable a low-cost and resilient net-zero grid



Minimize building life cycle emissions

Reduce embodied emissions from building materials and construction 90% by 2050 vs. 2005.



Aims to improve energy performance, advance resilience, and promote a **healthy learning environment** in schools.

Engages **K-12 schools**, especially those serving low-income student populations and in rural areas.

Provides **technical assistance** through direct consultations and **recognition** of exemplary school improvements.



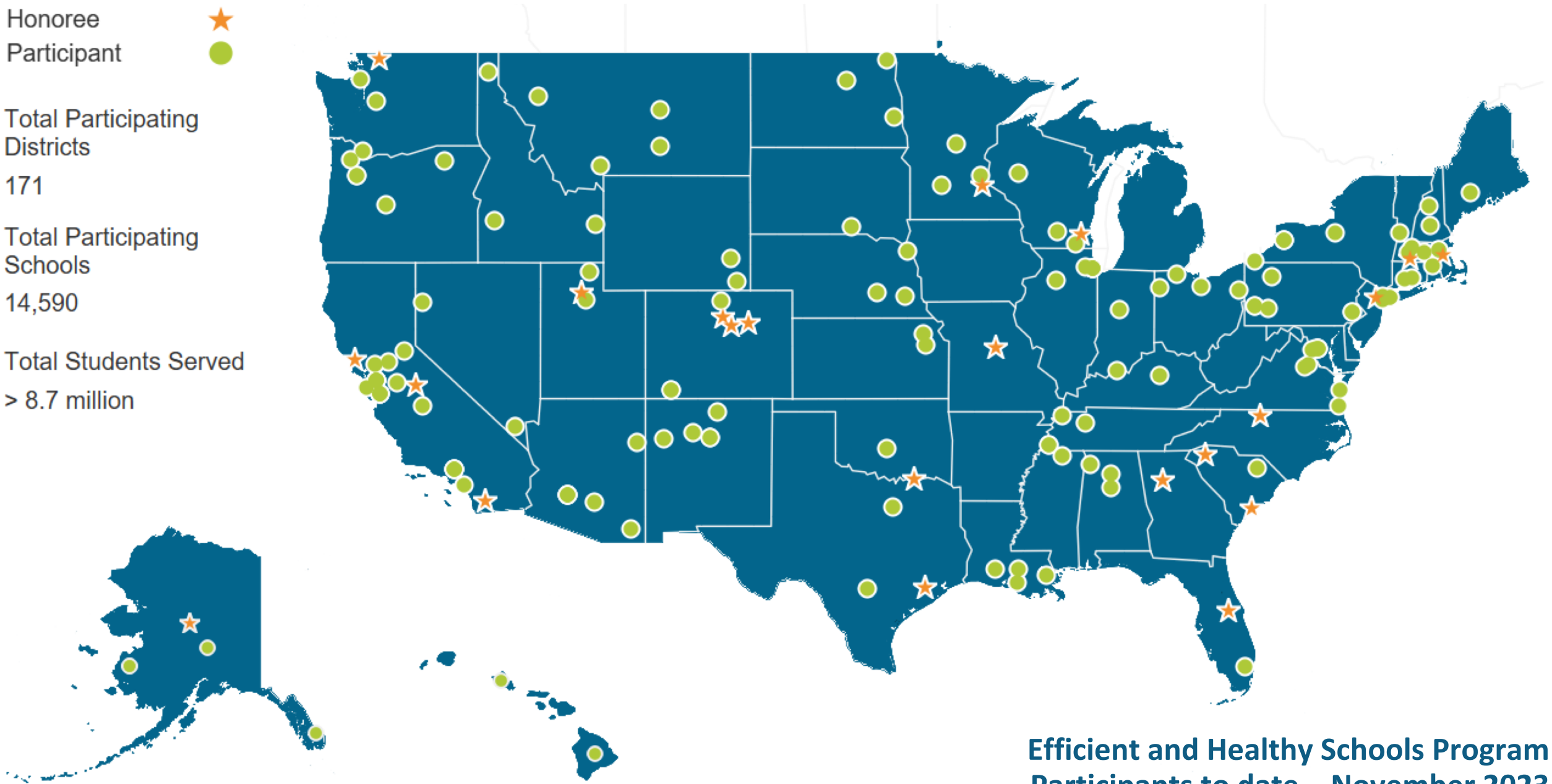
Honoree
Participant



Total Participating
Districts
171

Total Participating
Schools
14,590

Total Students Served
> 8.7 million



**Efficient and Healthy Schools Program
Participants to date – November 2023**

Three ways to get involved



Join the Program

- National support network of best practices
- Free Technical Assistance
- One-on-one onboarding



Support Schools

- Engage with active schools and districts
- Be listed on program website
- National network of leading organizations



Gain Recognition

- National recognition
- Free Technical Assistance
- Onboarding and coaching

Key Program Dates

Supporter Webinars

- January 16, 2023
- March 27, 2024

Recognition Cohorts

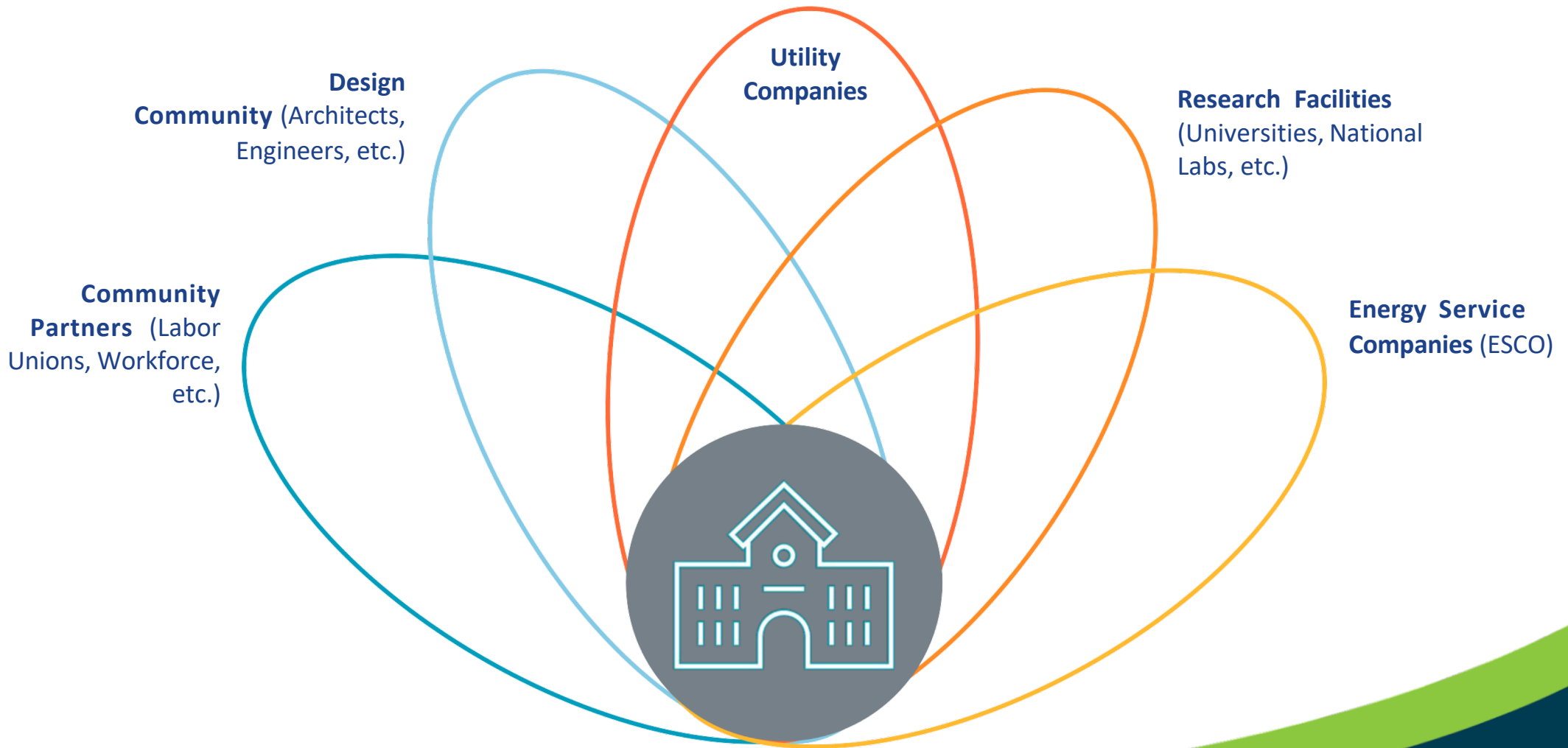
- January 30, 2024 – Solutions Strategist & Data Detective
- February 29, 2024 – Retrofit Revolutionary & Performance Pro

Recognition application deadline

→ **April 5, 2024**



Power of Partnerships



Energy Service Company (ESCO)

ESCOs can identify opportunities for energy conservation measures, estimated savings, and implementation costs. ESCOs can also provide financing options through Energy Savings Performance Contracts (ESPCs).

University Partner

University partners can be a great asset to K-12 schools by assisting with energy benchmarking, facilitating the development of new partnerships for energy audits and proposal development.

Community-Based Organization

Partnering with local community organizations can provide critical support in areas like project management, financial administration, workforce development, and more.

Utility Partner

Utility partners bring experience in managing local energy service projects and can provide net-zero financing options through Energy Performance Contracts with low or no upfront costs to LEAs.

Get Involved and Find Out More!

- **Join** | [Healthy Schools \(lbl.gov\)](https://lbl.gov)
- **Subscribe** to the Efficient and Healthy Schools Program [Mailing List](#)
- **Resources** | [Healthy Schools \(lbl.gov\)](https://lbl.gov)

For more information, email schools@lbl.gov



Technical Assistance Overview

David Landman
Berkeley Lab Affiliate

What is Technical Assistance?

Tailored support and resources from subject matter experts in multiple categories, relevant to either implementation or planning efforts within schools or districts.

Technical Assistance: Categories



General Program Support

- Onboarding
- Identifying first steps & next steps
- Recognition submission assistance



Energy management

- Benchmarking
- Building assessments
- Energy analytics
- Retro commissioning



Goal Setting and Planning

- Develop district roadmap
- Facility planning & prioritization
- Documentation development: SOW, RFP, OPR



Technologies and Systems

- EEM identifications: HVAC, lighting, water, kitchens
- Energy Management Information Systems (EMIS) & Controls
- Commissioning
- Performance verification



Indoor Air Quality

- IAQ assessments and planning
- IAQ monitoring



Decarbonization

- Electrification approaches
- Emissions reduction calculations



Solar and Renewables

- Solar potential
- Program and funding opportunities



Resilience

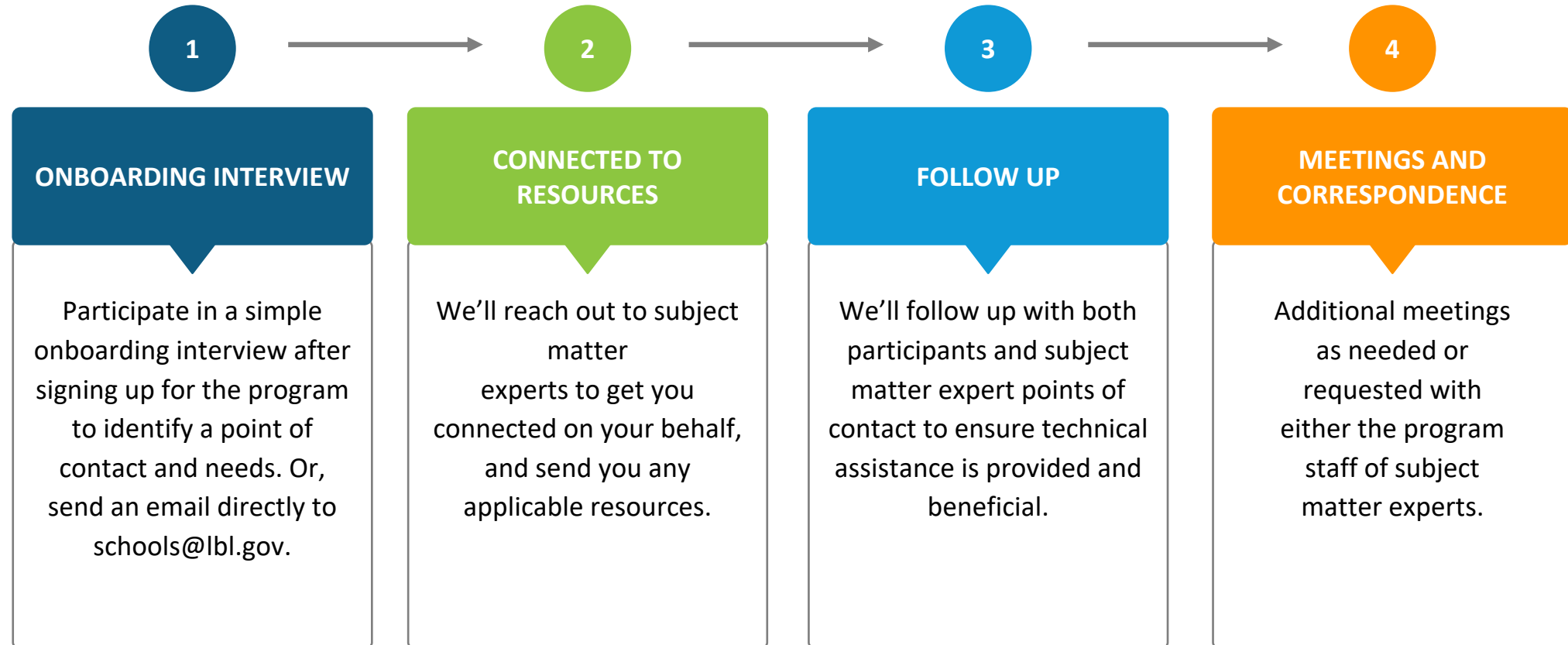
- Technical Resilience Navigator
- Approaches to manage emerging risks e.g., extreme heat, wildfire smoke



Funding

- Identify federal, state, local and utility funding available
- Value proposition for funding pitch
- Performance based contracting

Technical Assistance: Process

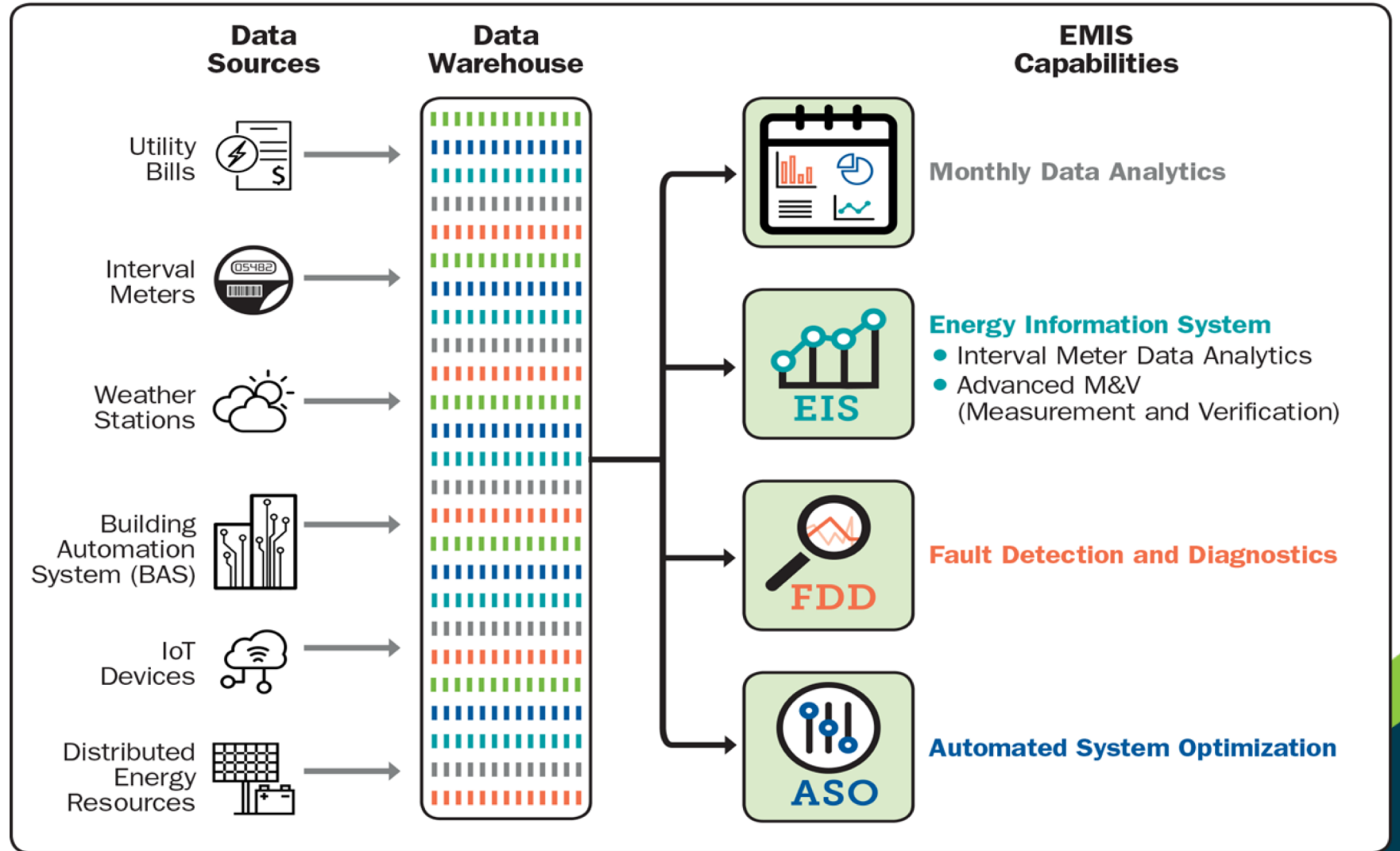


Technical Assistance: Benchmarking

- Identify underperforming schools/buildings in your district to target for efficiency improvements
- Identify best practices that are replicable across schools
- Set investment priorities to compare savings across buildings in your district to decide how to allocate capital and maximize financial returns in energy efficiency
- Verify savings through continuous tracking of energy over time
- Share and report performance, educate classes and the town/city about how the schools are performing
- Earn recognition by best performing school in the district or energy star certification (75 or higher)
- Benchmark more than energy, include water, waste, greenhouse gas emissions

Energy Management and Information System (EMIS)

<https://smartenergyanalytics.org/>



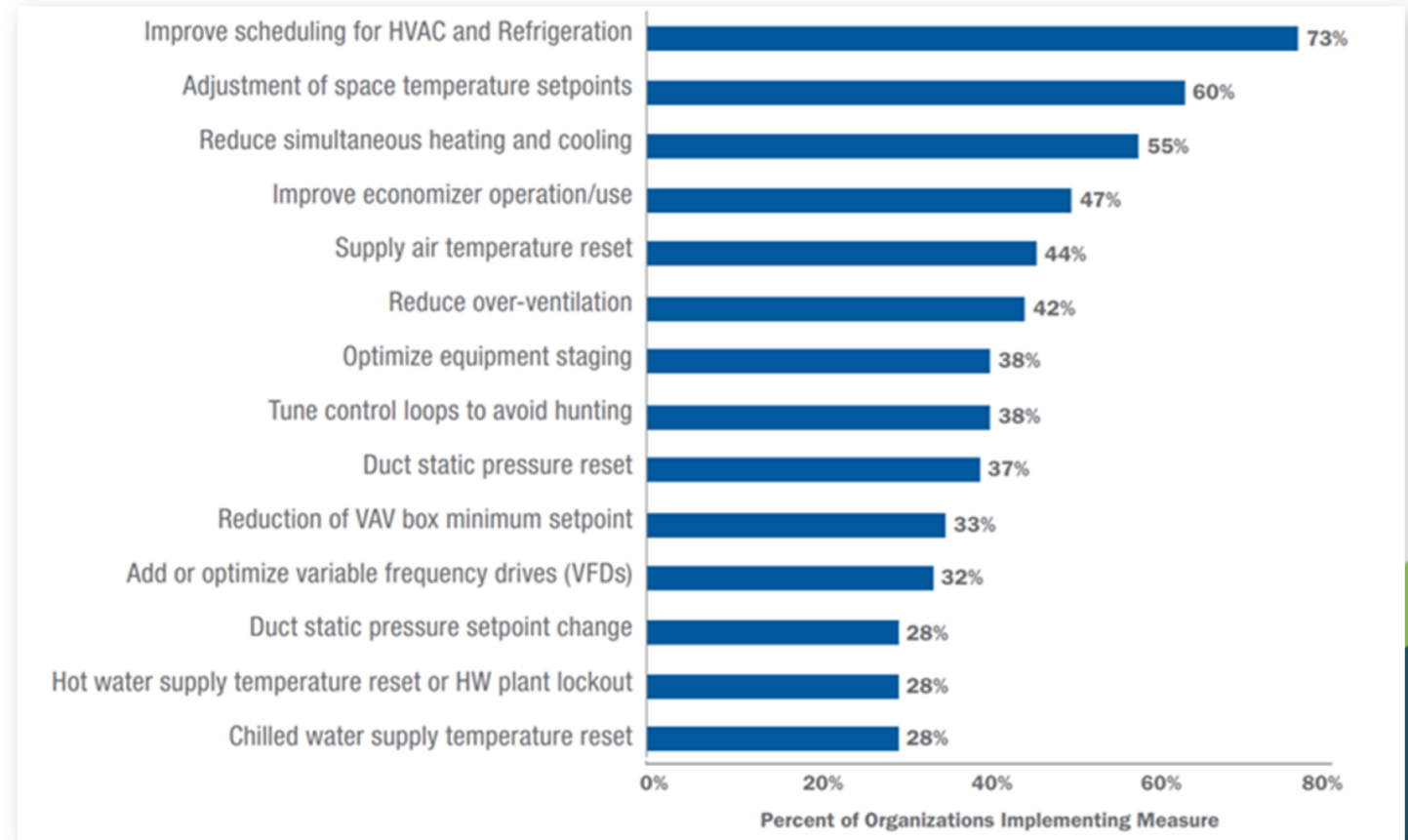
Technical Assistance: EMIS

■ Faults from EIS data:

- Start/stop schedules
- Weekend/holiday energy use
- High baseload
- Demand spikes
- High energy use relative to portfolio or prior usage (modeled prediction)

■ Faults from FDD:

- Setpoints
- Simultaneous H&C
- Economizer
- Reset schedules
- Equipment staging/control loop tuning



Technical Assistance: Tools and References

Quick Building Assessment Form and Tool

This tool provides identification of energy improvement opportunities, recommendations for energy efficiency measures, and associated health and safety benefits for various projects

Third Party Needs Assessment

Use of a site audit or energy efficiency measure identification and impacts analysis as provided by a contractor (i.e., Energy Service Companies [ESCOs] or consultant).

DOE Asset Score

This tool allows users to generate energy retrofit measure recommendations and energy savings estimates

<https://buildingenergyscore.energy.gov/>

School Prototype and Retrofit Package

https://www.energy.gov/sites/default/files/2022-11/Modeled%20Retrofit%20Package%20Performance%20for%20Prototype%20Schools_Nov2022.pdf



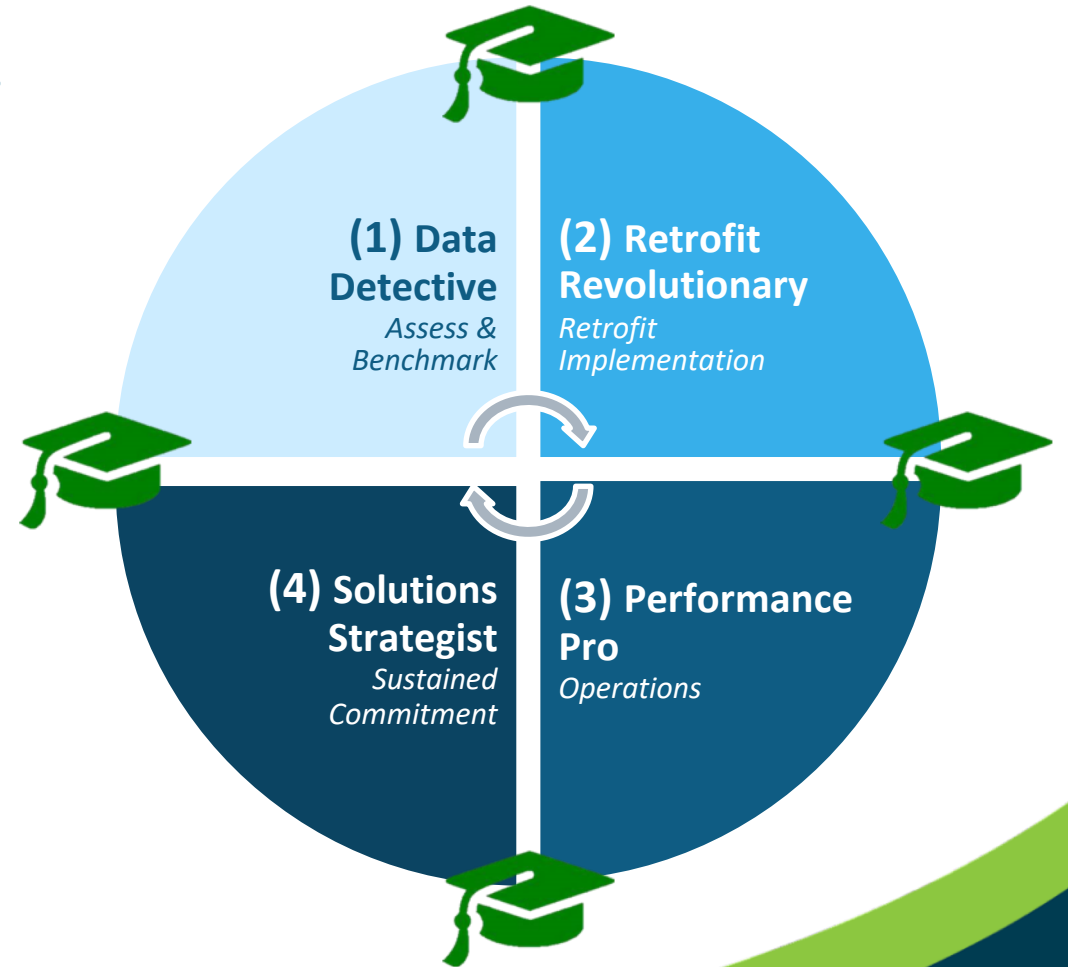
2023-2024 EHSP Recognition Opportunities

Shannon Oliver
Senior Project Manager
New Buildings Institute

2023-2024 Recognition Categories

All Categories Offered

- Tangible Technical Assistance menu administered by LBNL & NBI
- Peer-Peer learning in cohorts of districts facilitated by NBI
- Mentorship from previous honorees
- Financing & funding development
- Packaged resource sharing by NBI



Data Detective



Honoring schools and districts that demonstrate best practices to prioritize school improvements through:

- Building assessments
- Benchmarking
- Utilizing building data

Retrofit Revolutionary



Honoring schools and districts that showcase exemplary retrofit projects that improve and promote:

- Energy efficiency
- Resilience
- Healthy learning environments

Performance Pro



Honoring schools and districts that strive for continuous improvement throughout the organization through:

- Operations and maintenance activities
- Performance evaluations
- Retro-commissioning activities

Solutions Strategist



Honoring schools and districts that develop plans and make committed goals to improving their buildings that:

- Advance district initiatives
- Are sustained
- Are long-term

Preparation

Interested schools and districts will fill out a recognition application and request assistance from the Campaign if needed.

Winter 2023-2024

April 2024

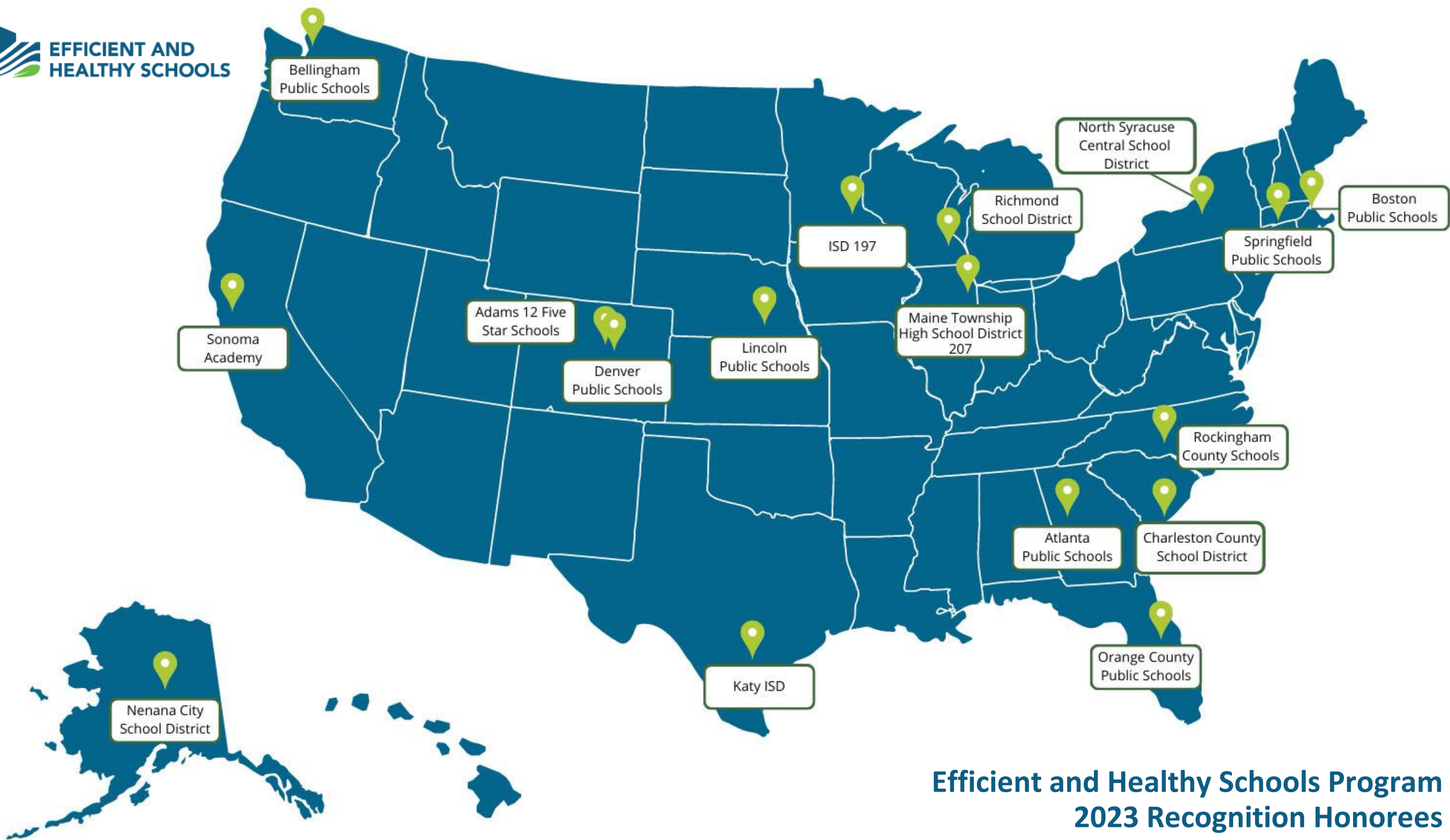
May-June 2024

Final Submission

Schools and districts will submit application and supporting materials by April 5, 2024.

Announcement & Celebration

Schools and districts will be notified of recognition in May and will be invited to attend an in-person celebration in June 2024.



**Efficient and Healthy Schools Program
2023 Recognition Honorees**



Apply for Recognition opportunities today!

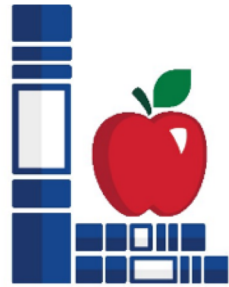




School District Experience – Lincoln Public Schools

Brittney Albin

Sustainability Coordinator
Lincoln Public Schools



Lincoln Public Schools

Lincoln Public Schools

- Lincoln, Nebraska
- **41,784** Students
- **47.7%** Free/Reduced Lunch Participants
- **6,527** Staff
- **81** Facilities
- **8,383,802** Total Square Footage

Recognition Highlights

- Park Middle School, built in 1926, went through an Indoor Air Quality project to replace all mechanical HVAC systems, update lighting, address code deficiencies, and make other building envelope improvements.
- 212 geothermal wells and 108 water source heat pumps replaced conventional air handling units which transitioned the primary heating source from being entirely natural gas to now being entirely electric.
- Prior to project, EUI was 94 and annual energy cost was \$273,475. After project EUI is 28 and annual energy cost is \$125,374



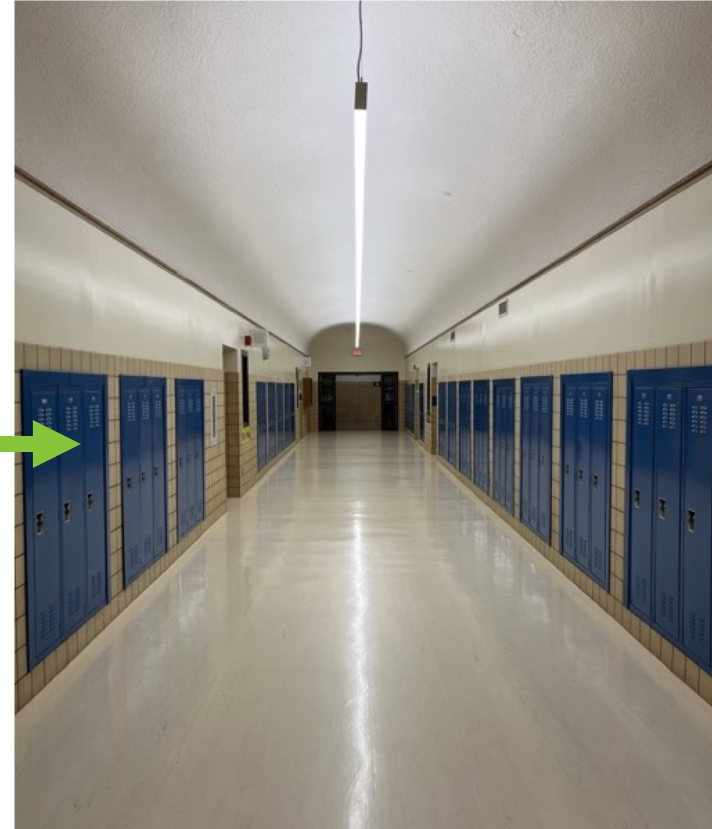
Other Updates: New Windows & Cafeteria Addition



Other Updates: High Efficiency Fresh Air Units

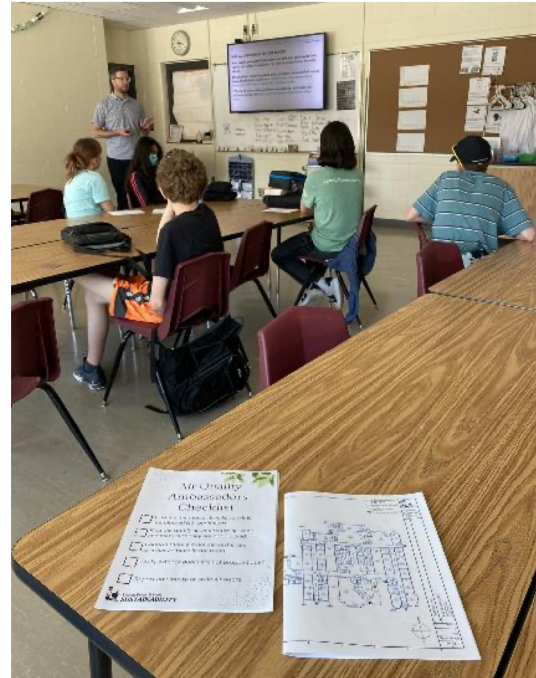


Other Updates: LED Upgrades



Air Quality Ambassadors

- Park Middle Green Team trained to become Air Quality Ambassadors
- Brought in CO2 and VOC meters as well as previously collected air and water quality data



School Celebrations

- Presented the award to the principal at a school assembly. Students were VERY impressed that their 100-year-old school building was earning these types of awards.
- Shared information about the project and the award at Parent Teacher Conferences.

News

LPS pockets national award for Park Middle School project

Park Middle School students have been enjoying a wide range of healthy benefits from a large renovation project on campus.

That list of positive outcomes grew on Sept. 20 with the unveiling of a national award.

Members of the Lincoln Public Schools Sustainability Team announced that the Park Indoor Air Quality (IAQ) project was the winner of the "Best in Class: Energy Efficiency Plus Health Award" from the United States Department of Energy.

Principal Charlotte Everts accepted the honor in front of more than 200 seventh-grade students in the auditorium. Only 17 school districts in the United States received recognition this year.



From left, Mandy Bydalek, Charlotte Everts and Britney Albin smile with the "Best in Class: Energy Efficiency Plus Health Award" from the United States Department of Energy. Lincoln Public Schools earned the award for an extensive

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Park Middle School nationally recognized for \$20 million environmental efforts

Jenna Ebberts Sep 21, 2023 12



The renovated Park Middle School with new windows and a garden is seen on Wednesday. Park Middle School received recognition for being an Efficient and Healthy School by the U.S. Department of Energy.

JUSTIN WAN, Journal Star





Question & Answer

Reilly Loveland

Associate Director

New Buildings Institute

THANK YOU – Connect with us!!

- Join | [Healthy Schools \(lbl.gov\)](https://www.lbl.gov/efficient-and-healthy-schools)
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- Resources | [Healthy Schools \(lbl.gov\)](https://www.lbl.gov/efficient-and-healthy-schools)

**Apply for
recognition
today!**

